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The impact of the presence and extent of valve calcification on long-term results of percutaneous mitral commissurotomy

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Purpose: The indication of percutaneous mitral commissurotomy (PMC) is debated in patients (pts) with calcified mitral stenosis. We report outcome up to 20 years according to the presence and the extent of valve calcification.

Methods: PMC was performed in 1024 consecutive pts between 1986 and 1995: 710 pts had non-calcified valves (NCAL group) and 314 had valve calcification (CAL group) graded from 1 (mild) to 4 (extensive) using fluoroscopy. 177 pts (57%) were grade 1, 89 (28%) grade 2 and 48 (15%) grade 3 or 4.

Results: Good immediate results (GIR), defined as final valve area ≥ 1.5 cm² without mitral regurgitation $>2/4$, were obtained in 93% in NCAL group vs. 80% in CAL group ($p<0.0001$). Among CAL group, GIR were 87% for grade 1 calcification vs. 72% for grades 2,3 and 4 ($p=0.01$).

Good functional results (GFR) were defined as survival without intervention and in NYHA class I or II. 20-year rates of GFR were $38\pm3\%$ for NCAL group and $12\pm3\%$ in CAL group ($p<0.0001$). Among pts with GIR, 20 year rates of GFR were $40\pm3\%$ in NCAL group vs. $21\pm3\%$ in CAL group ($p<0.0001$). In CAL group predictors of GFR after GIR were: younger age ($p=0.003$), lower NYHA class ($p=0.01$), sinus rhythm ($p=0.0002$), lower post-PMC mean gradient ($p<0.0001$) and a lower extent of valve calcification ($p=0.015$).

According to the extent of valve calcification, 15-year rates of GFR after GIR were $35\pm4\%$ for pts in grade 1 vs. $19\pm4\%$ for pts in grades 2, 3 and 4 ($p=0.01$).

Conclusion: This study further confirms the negative prognostic impact of valve calcification on immediate and long-term results of PMC. PMC may, however, be considered to defer valve surgery in selected patients. In particular, more than 1 patient out of 3 with mild calcification still benefits from PMC 15 years after GIR. Young patients with few symptoms and in sinus rhythm are likely to benefit from PMC, even with calcified valves.

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Left atrial remodeling after successful balloon mitral valvuloplasty

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Background: Left atrium (LA) remodeling has a crucial adverse impact on outcome and prognosis in mitral stenosis. Few studies have reported the effect of balloon mitral valvuloplasty (BMV) on LA volume and function. The aim of this study was to assess the evolution of LA volume and compliance 1 and 6 months after successful BMV in patients in sinus rhythm.

Methods: 95 consecutive patients (70% women; age 31 ± 8 years; range 19-45) with severe mitral stenosis (mitral valve area ≤ 14 cm²) who underwent successful BMV were included prospectively. Using-dimensional echocardiography, and according to the prolate ellipse method, LA volume, area and compliance (The maximum and the minimum LA volume were calculated from apical four- and two-chamber zoomed views of the LA, using the biplane method of discs. The difference between maximum and minimum LA volume divided by the minimum LA volume was used as an index of atrial compliance) were determined before BMV, and 1 month and 6 months after BMV. LV global systolic function was evaluated by EF, by the biplane Simpson method. Longitudinal left ventricular annular velocities were quantified by spectral pulsed wave Doppler tissue velocity imaging

Results: Mitral valve area increased from 0.88 ± 0.2 to 1.8 ± 0.26 cm² ($P<0.0001$). Mean mitral valve gradient (MVG) decreased from 14 ± 6 to 6 ± 2 mmHg ($P<0.0001$) immediately after BMV. Indexed LA volume fell from 66 ± 14 to 52 ± 12 mL/m² (2) ($P=0.02$) after BMV and to 45 ± 13 mL/m² (2) at 6 month ($P<0.01$) and an increase of the atrial index. Only patients with a median LA volume ≥ 55 mL/m² (2) before BMV had a significant reduction in

LA volume ($P=0.0001$). Decrease in LA volume was correlated with decreases in PA-RV peak diastolic gradient ($r=0.45$, $P=0.008$) and MVG ($r=0.35$, $P=0.04$).

Conclusion: In patients with mitral stenosis in sinus rhythm, successful BMV results in an immediate decrease in LA volume. This reduction, maximal immediately after BMV, correlates with decreases in MVG and PA-RV peak diastolic gradient, and is significant only when LA volume before BMV is severely enlarged.

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Impact of percutaneous mitral valve commissurotomy on right ventricular function

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Introduction: The right ventricular function is an important determinant of clinical symptoms, exercise capacity, pre-operative survival and post-operative outcome in patients with mitral stenosis (MS).

Objectif: The aim of this work was to evaluate the impact of percutaneous mitral commissurotomy (PMC) on right ventricular function (RV) in patients with severe mitral stenosis managed in Center of cardiology- University Hospital IBN Rochd-Casablanca.

Methods and results: Of 150 patients there were 20 men and 130 women, their mean age was 35 ± 10 years. One hundred were in New York Heart Association class II, 40 in class III and 10 in class IV. Eighty patients with atrial fibrillation.

Were studied before and after PMC. Multiple parameters of global and longitudinal RV function were assessed by conventional and tissue Doppler imaging echocardiography

Mitral surface area and hemodynamic parameters improved significantly after PMC; mean left atrial pressure fell from 18.76 ± 6.18 to 10.65 ± 4.38 mmHg ($P<0.001$), mean transmittal gradient from 14.03 ± 4.70 to 4.63 ± 2.05 mmHg ($P<0.001$) and mitral valve area from 0.99 ± 0.22 to 1.88 ± 0.41 cm² ($P<0.001$), in the RV Tei index from 0.44 ± 0.025 to 0.29 ± 0.17 (P 1/4 0.021), in myocardial acceleration during isovolumic contraction (IVA) at the lateral tricuspid annulus from 0.36 ± 0.11 m/s² to 0.25 ± 0.07 m/s² (P 1/4 0.023), and in isovolumic contraction velocities at the lateral tricuspid annulus from 11.03 ± 3.37 cm/s to 8.50 ± 2.04 cm/s (P 1/4 0.034).

Conclusion: This study demonstrates that, in patients with MS, global right ventricular function improves in the majority of patients.

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Increased Risk of Left Heart Valve Regurgitation Associated with Benfluorex Use in Patients with Diabetes Mellitus. A Multicentre Study

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Background: Benfluorex was withdrawn from European markets in June 2010 following reports of an association with heart valve lesions. The link